



SANYO Semiconductors

DATA SHEET

An ON Semiconductor Company

EMH2407 — General-Purpose Switching Device Applications

N-Channel Silicon MOSFETs

Features

- Low ON-resistance
- Best suited for LiB charging and discharging switch
- Common-drain type
- 2.5V drive
- Protection diode in

Specifications

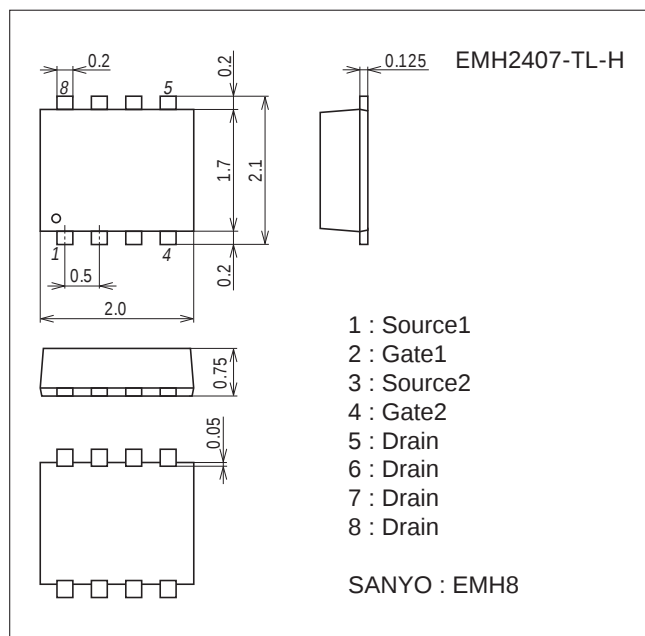
Absolute Maximum Ratings at Ta=25°C

Parameter	Symbol	Conditions	Ratings	Unit
Drain-to-Source Voltage	V_{DS}		20	V
Gate-to-Source Voltage	V_{GS}		± 12	V
Drain Current (DC)	I_D		6	A
Drain Current (Pulse)	I_{DP}	$PW \leq 10\mu s$, duty cycle $\leq 1\%$	40	A
Allowable Power Dissipation	P_D	When mounted on ceramic substrate (900mm ² ×0.8mm) 1unit	1.3	W
Total Dissipation	P_T	When mounted on ceramic substrate (900mm ² ×0.8mm)	1.4	W
Channel Temperature	T_{ch}		150	°C
Storage Temperature	T_{stg}		-55 to +150	°C

Package Dimensions

unit : mm (typ.)

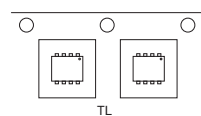
7045-006



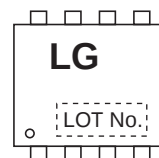
Product & Package Information

- Package : EMH8
- JEITA, JEDEC : -
- Minimum Packing Quantity : 3,000 pcs./reel

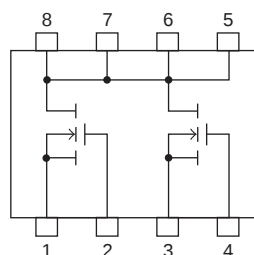
Packing Type : TL



Marking



Electrical Connection



SANYO Semiconductor Co., Ltd.

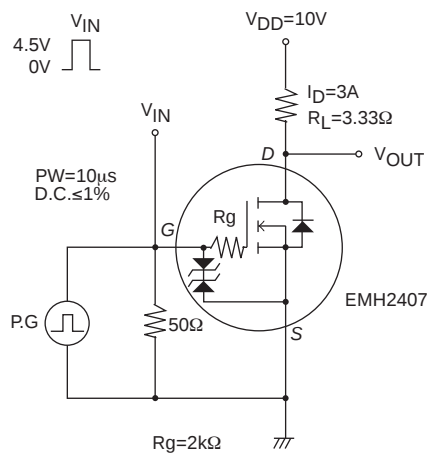
<http://semicon.sanyo.com/en/network>

EMH2407

Electrical Characteristics at Ta=25°C

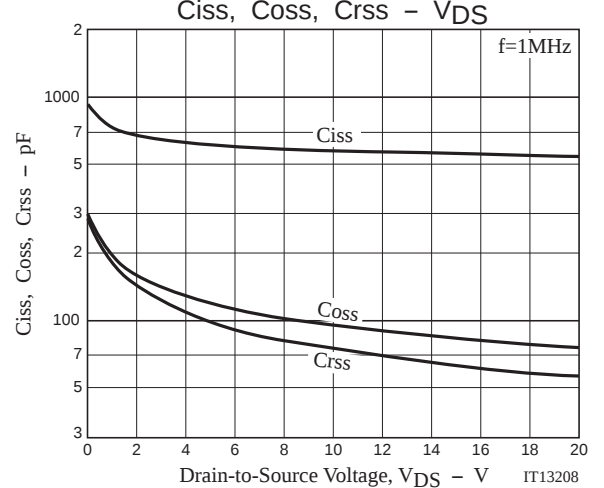
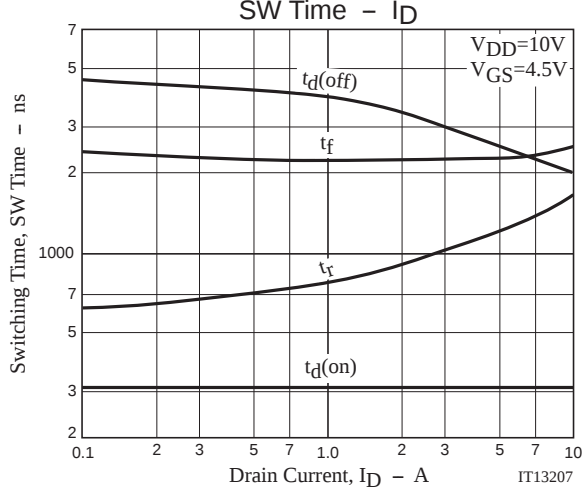
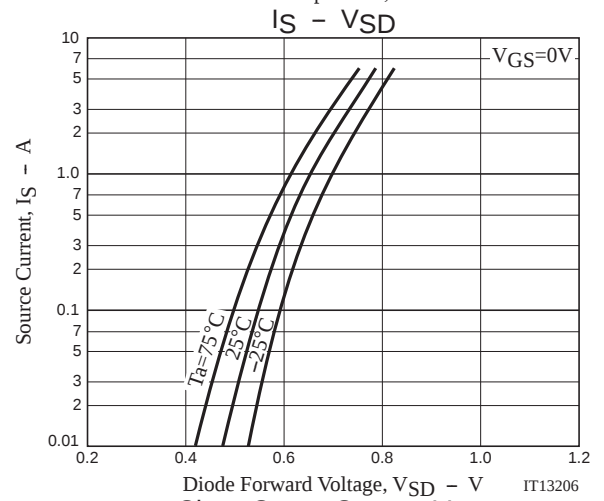
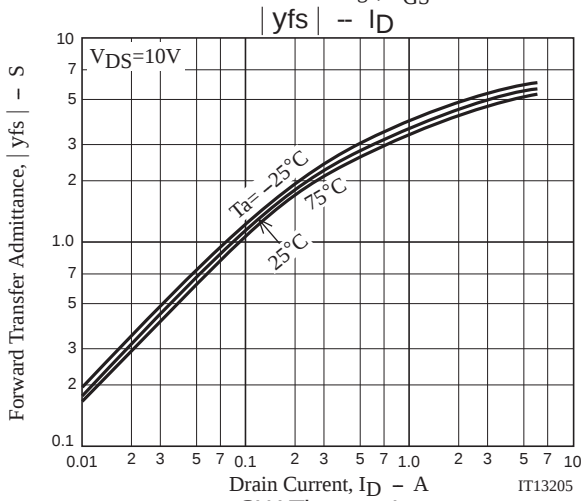
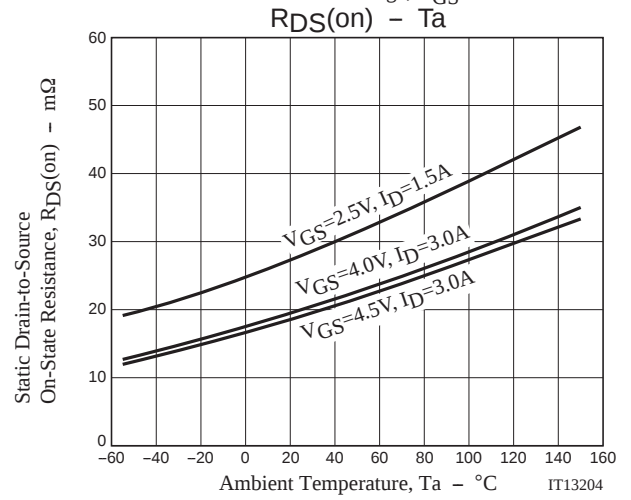
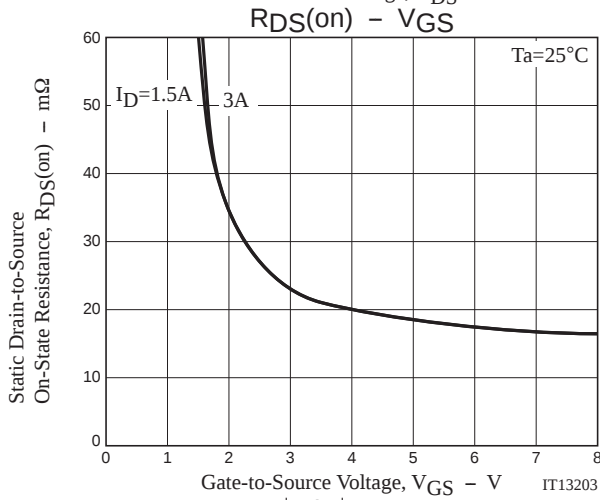
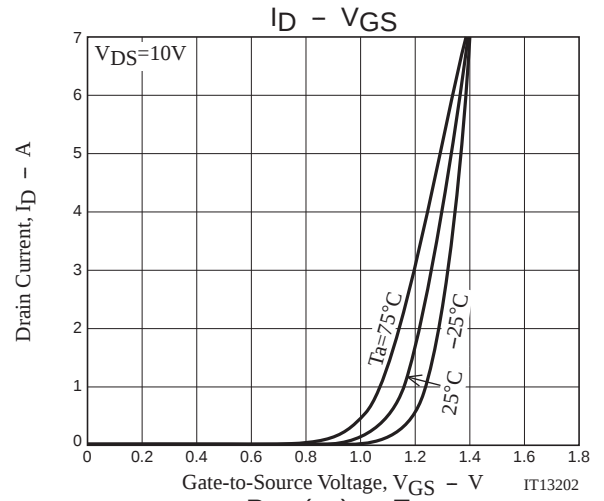
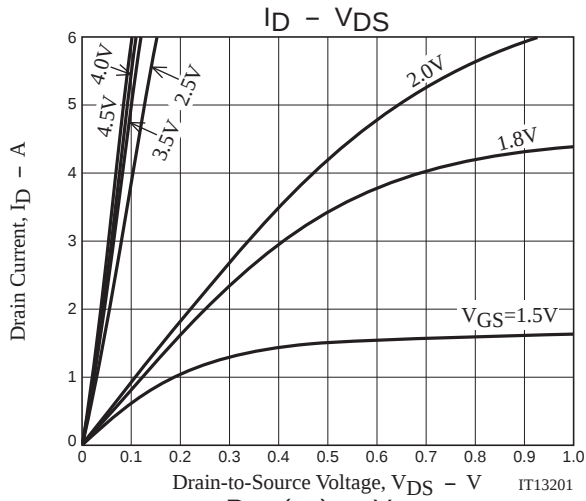
Parameter	Symbol	Conditions	Ratings			Unit
			min.	typ.	max.	
Drain-to-Source Breakdown Voltage	$V_{(BR)DSS}$	$I_D=1mA, V_{GS}=0V$	20			V
Zero-Gate Voltage Drain Current	I_{DSS}	$V_{DS}=20V, V_{GS}=0V$			1	μA
Gate-to-Source Leakage Current	I_{GSS}	$V_{GS}=\pm 8V, V_{DS}=0V$			± 10	μA
Cutoff Voltage	$V_{GS(off)}$	$V_{DS}=10V, I_D=1mA$	0.5		1.3	V
Forward Transfer Admittance	$ y_{fs} $	$V_{DS}=10V, I_D=3A$	3	5		S
Static Drain-to-Source On-State Resistance	$R_{DS(on)1}$	$I_D=3A, V_{GS}=4.5V$	13	19	25	$m\Omega$
	$R_{DS(on)2}$	$I_D=3A, V_{GS}=4V$	14	20	26	$m\Omega$
	$R_{DS(on)3}$	$I_D=1.5A, V_{GS}=2.5V$	16	28	39	$m\Omega$
Input Capacitance	C_{iss}	$V_{DS}=10V, f=1MHz$		580		pF
Output Capacitance	C_{oss}			95		pF
Reverse Transfer Capacitance	C_{rss}			75		pF
Turn-ON Delay Time	$t_d(on)$	See specified Test Circuit.		310		ns
Rise Time	t_r			1020		ns
Turn-OFF Delay Time	$t_d(off)$			3000		ns
Fall Time	t_f			2250		ns
Total Gate Charge	Q_g	$V_{DS}=10V, V_{GS}=4.5V, I_D=6A$		6.3		nC
Gate-to-Source Charge	Q_{gs}			0.83		nC
Gate-to-Drain "Miller" Charge	Q_{gd}			1.9		nC
Diode Forward Voltage	V_{SD}	$I_S=6A, V_{GS}=0V$		0.78		V

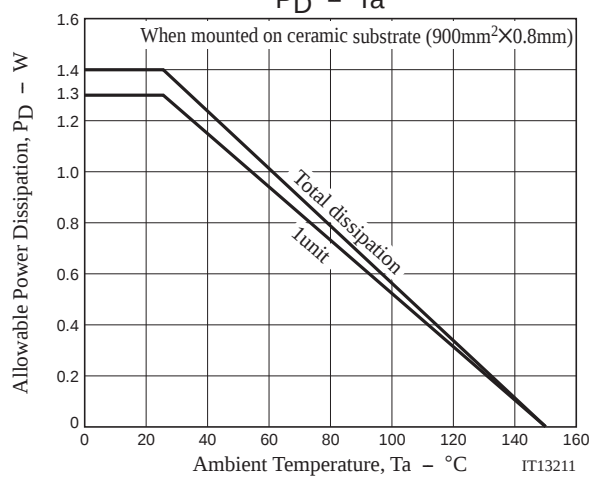
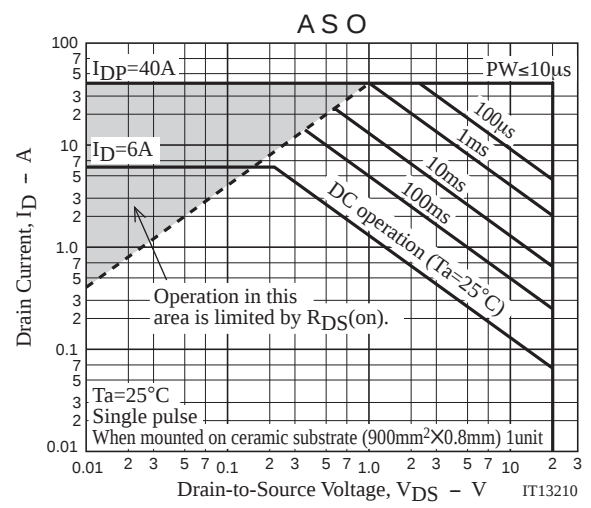
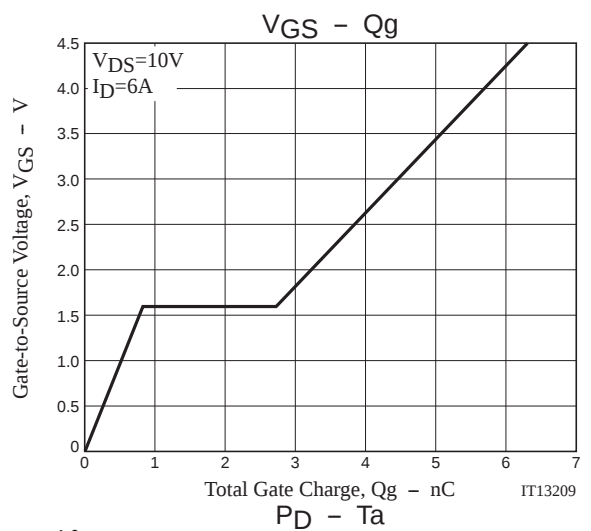
Switching Time Test Circuit



Ordering Information

Device	Package	Shipping	memo
EMH2407-TL-H	EMH8	3,000pcs./reel	Pb Free and Halogen Free





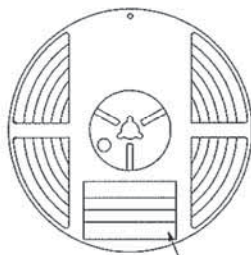
Embossed Taping Specification

EMH2407-TL-H

1. Packing Format

Package Name	Carrier Tape Type	Maximum Number of devices contained (pcs)			Packing format	
		Reel	Inner box	Outer box	Inner BOX (C-1)	Outer BOX (A-7)
EMH8	MCP4	3,000	15,000	90,000	5 reels contained Dimensions:mm (external) 183×72×185	6 inner boxes contained Dimensions:mm (external) 440×195×210

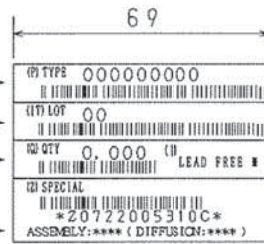
Packing method



Type No.
LOT No.
Quantity
Origin

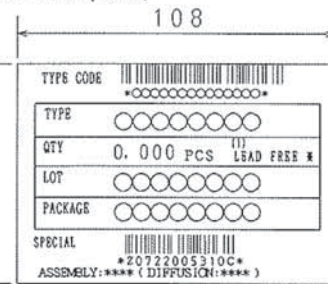
Reel label

Reel label, Inner box label
(unit:mm)



Outer box label

It is a label at the time of factory shipments.
The form of a label may change in physical
distribution process.



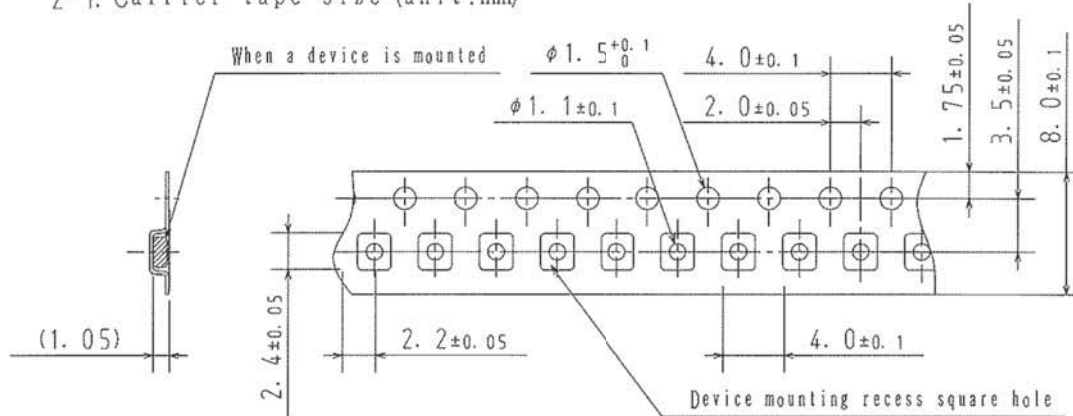
NOTE (1)

The LEAD FREE * description shows that the surface
treatment of the terminal is lead free.

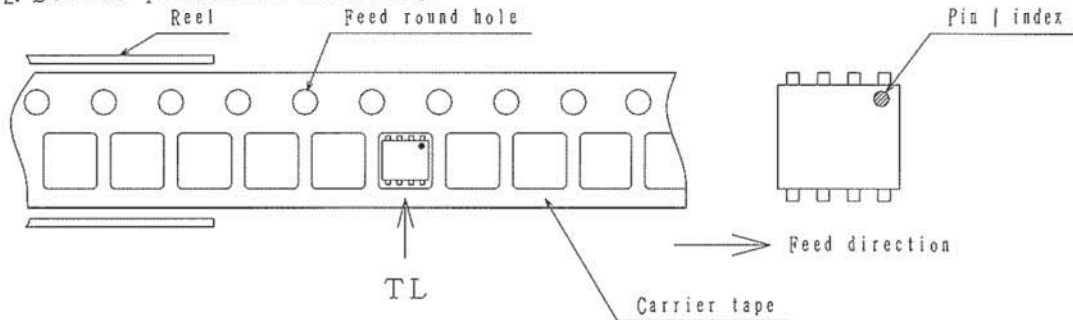
Label	JEITA Phase
LEAD FREE 3	JEITA Phase 3A
LEAD FREE 4	JEITA Phase 3

2. Taping configuration

2-1. Carrier tape size (unit:mm)



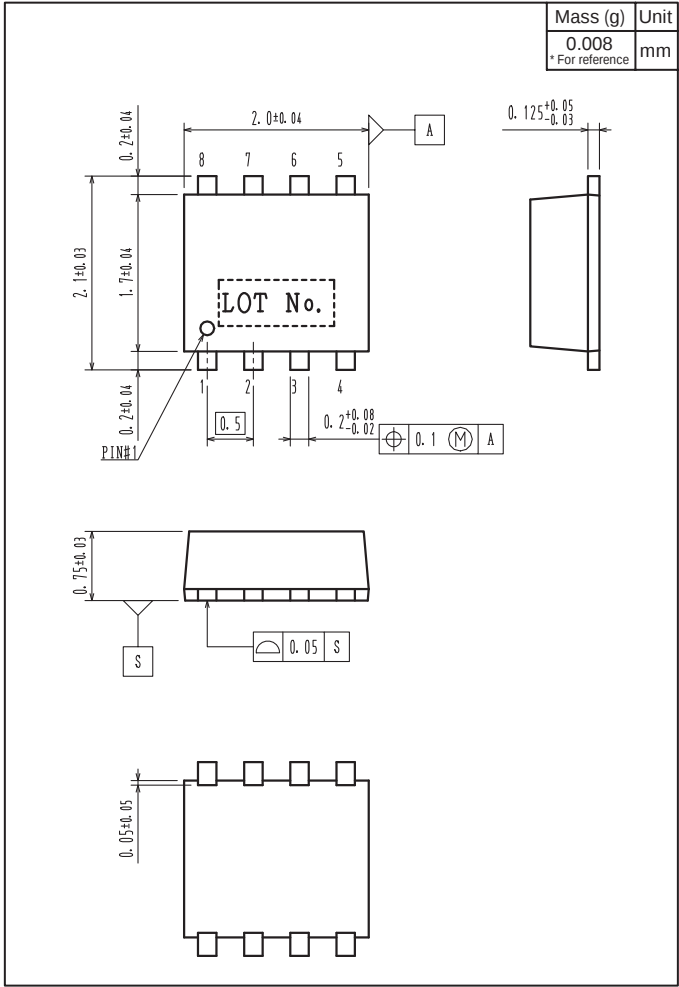
2-2. Device placement direction



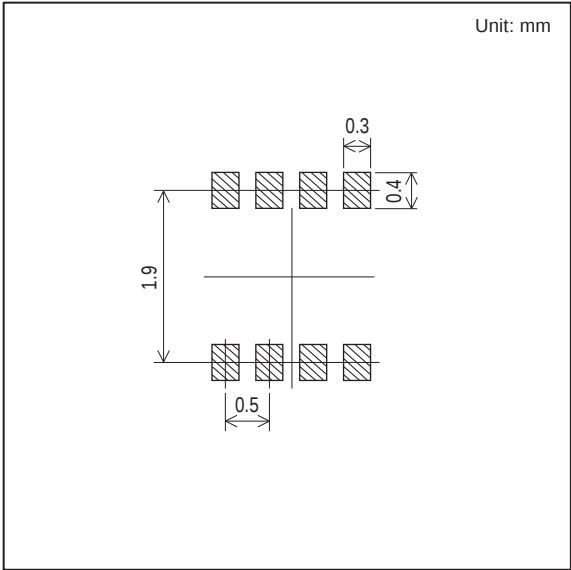
Those with pin 1 index on the feed hole side.....TL

EMH2407

Outline Drawing
EMH2407-TL-H



Land Pattern Example



Note on usage : Since the EMH2407 is a MOSFET product, please avoid using this device in the vicinity of highly charged objects.

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Офис по работе с юридическими лицами:

105318, г.Москва, ул.Щербаковская д.3, офис 1107, 1118, ДЦ «Щербаковский»

Телефон: +7 495 668-12-70 (многоканальный)

Факс: +7 495 668-12-70 (доб.304)

E-mail: info@moschip.ru

Skype отдела продаж:

moschip.ru

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